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EXAMINER

CHANG, EDITH M

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 08/13/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/591,196

Applicant(s)

OLEYNIK, VLADISLAV A.

Examiner

Edith M Yeh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,9-13,18-21,26 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-4,7,8,14-17 and 22-25 is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Drawings

1. The drawings are objected to because the drawings do not indicate/label the elements stated in the specification.

Figure 8, add label "phase shifter" to numeral 800;

Figure 9, add label "power multiplier" to numeral 900 & 902, "DC blocking capacitor" to numeral 904 & 906;

Figure 11, add label "squaring circuit" to numeral 1100 & 1102, "multiplier" to numeral 1104.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 9, 11-13, & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Partyka et al. (US Patent Re.35209) in view of Borth et al. (US Patent 4829543).

Regarding **claim 1**, except explicitly specify the quadrature phase modulation, Partyka et al. discloses all subject matter claimed: a quadrature phase modulation receiver for a spread spectrum communications system (FIG.5), the receiver comprising: (a) a mixer (552/556 FIG.5) for mixing a received spread spectrum signal (504 FIG.5) with a heterodyne signal (508/514 FIG.5) to convert the frequency of the received signal to an intermediate frequency; (b) a regulated oscillators module (558 & 562 FIG.5) coupled to the mixer for producing the heterodyne signal and an intermediate frequency signal (514 & 510 FIG.5); (c) a frequency multiplier (561 FIG.5) coupled to the mixer for receiving the intermediate frequency signal and multiplying the frequency of the signal by a predetermined multiplication factor to produce a frequency multiplied signal (516 FIG.5) ; and means (562 FIG.5) for producing an oscillator control signal (545/512 FIG.5) based on the frequency multiplied signal output from the frequency multiple, wherein the regulated oscillators module produces the intermediate frequency signal based on the oscillator control signal. However Borth et al. teach the quadrature phase modulation of BPSK (column 5 lines 60-65, column 9 lines 62-65) in their quadrature receiver for multipath fading channels. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Partyka et al.'s receiver as a quadrature receiver where the BPSK is handled (Abstract, column 3 lines 20-25 '209) as Borth taught to demodulate the high speed rate multipath signals.

Regarding **claim 9**, further Partyka et al. discloses: (a) a phase discriminator (553 FIG.5) for receiving the signal output from the mixer and the intermediate frequency signal and producing a signal indicative of transmitted data and a spreading code (555 FIG.5); and (b) a

demodulator (554 FIG.5; column 10 lines 61-67) for receiving the signal output from the phase discriminator and removing the spreading code.

Regarding **claim 11**, Partyka et al. further discloses outputting the signal to a direct sequence spread spectrum demodulator (Abstract, 554 FIG.5, column 10 line 55-column 11 line 6).

Regarding **claim 12**, except explicitly specify the quadrature phase modulation, Partyka et al. discloses all subject matter claimed: the method (a) receiving a quadrature phase modulated spread spectrum signal (548-502-550-504 FIG.5); (b) mixing the quadrature phase modulated spread spectrum signal with a heterodyne signal to produce an intermediate frequency signal (578 FIG.5); removing the influence of data changes in the quadrature phase modulated spread spectrum signal from the intermediate frequency signal to produce an oscillator control signal (569-568-520-545 FIG.5, column 10 lines 20-25); (d) generating a synchronization signal based on the oscillator control signal (545-508-506 FIG.5); and (e) demodulating the quadrature phase modulated spread spectrum signal using the synchronization signal (506, 554 FIG.5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the Partyka et al.'s receiver as a quadrature receiver where the BPSK is handled (Abstract, column 3 lines 20-25 '209) as Borth taught to demodulate the high speed rate multipath signals.

Regarding **claim 13**, Partyka et al. further discloses the step (c) including multiplying the frequency of the intermediate frequency signal by a predetermined multiplication factor (561 FIG.5 where it multiplies the frequency of the intermediate frequency signal (578 produced by step (b)).

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Regarding **claim 19**, Partyka et al. further discloses outputting the signal to a direct sequence spread spectrum demodulator (Abstract, 554 FIG.5, column 10 line 55-column 11 line 6).

4. Claim 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Partyka et al. (US Patent Re.35209) in view of Borth et al. (US Patent 4829543), further in view of Schwarz et al. (US Patent 5537448).

Regarding **claim 5**, Partyka et al. does not specify the VCO in the receiver, however Schwarz et al. teaches a VCO in a switchable PLL circuit. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the VCO taught by Schwarz et al. as the oscillator (562 FIG.5 '209) in Partyka et al.'s receiver be able to switchover among different limit frequencies and stabilize quickly (column 1 line 65-column 2 line 15 '448).

Regarding **claim 6**, further Partyka et al. discloses the oscillator (558, 562 FIG.5) is adapted to receive the oscillator control signal (545 FIG.5) and produce the output signal based on the control signal (510 FIG.5).

5. Claims 10, 18, 20-21, & 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Partyka et al. (US Patent Re.35209) in view of Borth et al. (US Patent 4829543), further in view of Saleh et al. (US patent 5048057).

Regarding **claims 10, 18 & 26**, Borth et al.'s quadrature receiver is for TDMA, however Borth et al. does not specify the frequency hopping techniques which are well known in the TDMA. Saleh et al. teaches the frequency hopping demodulator (FIG.2). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the frequency hopping techniques of the frequency hopping demodulator taught by Saleh et al. in the

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demodulator of Partyka's receiver such that Partyka's receiver to have an efficient frequency hopping spread spectrum demodulator (column 1 line 65- column 2 line 8).

Regarding **claim 20**, except specify the computer program, Partyka et al. discloses all subject matter claimed stated in the rejection of claim 12. However Saleh et al. teaches a computer program for performing the receiver functions (column 12 lines 45-50). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the computer program taught by Saleh et al. to implement the Partyka et al.'s receiver function to have a flexible and portable receiver.

Regarding **claim 21**, Partyka et al. further discloses the step (c) including multiplying the frequency of the intermediate frequency signal by a predetermined multiplication factor (561 FIG.5 where it multiplies the frequency of the intermediate frequency signal (578 produced by step (b)).

Regarding **claim 27**, Partyka et al. further discloses outputting the signal to a direct sequence spread spectrum demodulator (Abstract, 554 FIG.5, column 10 line 55-column 11 line 6).

Allowable Subject Matter

6. Claims 2-4, 7-8, 14-17, 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Yeh whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Yeh
August 7, 2003



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